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ABSTRACT

Clerks, salespersons, plant and machine operators and laborers, and related workers, defined as operative workers, currently form more than half the work force. They share the following characteristics: comparatively low earnings, limited qualifications, often employed in industries subject to economic restructuring and sensitive to economic cycles, and are subject to higher rates of labor mobility. Although already low skilled, they receive less training both through the publicly funded system and from their employers. Recent Australian and overseas research has found that improving the skills of operative level workers can benefit employers through enhanced efficiency and productivity and a more flexible work force. A retraining strategy that is integrated into the existing delivery of vocational education and training (VET) and meets the specific needs of the existing operative level work force is critical. This would require the following actions: identifying the type and level of training operative workers may require; emphasizing their needs during the profile process so maximum training opportunities can be provided through the public VET system; encouraging public providers and employers to provide more training; and flexible delivery. (Appendixes include state training profiles and the role of Australian state training agencies.) (YLB)

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MEETING THE TRAINING NEEDS OF OPERATIVE LEVEL WORKERS

OCCASIONAL PAPER 95/4

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AUSTRALIAN
NATIONAL TRAINING
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December 1995

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1. INTRODUCTION

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EXECUTIVE SUMMARY

Part A - Job opportunities and career development - operative level workers -

"The lesson is clear. If you drop out of high school or have no more than a high school diploma, do not expect a good routine production job to be waiting for you".[1]

Clerks, salespersons, plant and machine operators and labourers and related workers, defined as operative workers, currently form more than half the workforce. They:

- have comparatively low earnings
- have limited qualifications
- have relatively high unemployment
- are employed in industries subject to economic restructuring and sensitive to economic cycles
- have higher rates of labour mobility than non operative employees
- receive less training, both through the publicly funded system and from their employers, than non-operative employees.

These workers are the most "at risk" in economic downturns and from technology changes. Today's low skilled workers are tomorrow's unemployed.

This situation is being compounded by structural changes currently operating in the labour market which have limited and are likely to further limit job opportunities for operative level workers.

Clerks, salespersons, plant and machine operators and labourers and related workers, defined as operative workers, currently form more than half the workforce (55.8 per cent). These employees have comparatively low earnings, tend to have limited qualifications, and comprise the majority of the unemployed:

- earnings for full-time non-operative employees were 36 per cent higher than for operative employees ($740.10 compared with $544.50 per week).
- 66 per cent of operative workers do not possess post school qualifications, compared with 51 per cent of all employees. Of those who do possess post school qualifications 37 per cent have only basic post school qualifications.
- of unemployed persons who had a job within the last two years, more than two thirds were last employed in operative level occupations although operative level employees comprised a much smaller proportion of the workforce.

Operative workers are also often employed in industries that are subject to economic restructuring and sensitive to economic cycles, most notably the manufacturing industries. They are subject to higher rates of labour mobility than non operative employees

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1 Robert Reich, *The Work of Nations*, p.213

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- 14 per cent of all employed persons changed their job in the preceding year. However, 15.5 per cent of operative level workers had been in their jobs for less than one year compared to 12.5 per cent of other workers.

In addition, operative workers, while already low skilled, receive less training both through the publicly funded system, and from their employers, than non-operative employees.

- operative level training tends to be in shorter courses than training for other occupational groups. Moreover, operative level workers on average receive less intensive training than more skilled employees.
- employers are spending fewer dollars and less time on training employees in the operative categories Labourers and Plant Operators and Clerks, Sales and Service Workers than on occupations at higher classification levels.
- the problem for operative level workers is being exacerbated by limited growth in middle-level jobs.

This combination can limit the creation of a flexible, high skilled and productive workforce.

The training debate must refocus with an emphasis not only on providing training for school leavers but also for less skilled adult workers to enhance their employment prospects. What this means is an emphasis on providing VET to people in the workforce, rather than a traditional preoccupation with front end and entry level training.

A workforce retraining strategy which is integrated into the existing delivery of VET and meets the specific needs of the existing operative level workforce is critical. This could be achieved by:

- identifying the type and level of training operative workers may require (eg language, literacy and numeracy skills or more specific vocational skills)
- emphasising the needs of operative workers during the profile process so that maximum opportunities can be provided through the public VET system for the training of operative level workers, and
- encouraging public providers to provide more training opportunities for operative level workers and employers to increase their own training efforts for operative level employees.
- flexible delivery, including delivery in the workplace and partnerships between firms and providers

The above suggestions will enhance these workers' capacity to progress their careers with their existing employers or seek alternative employment when necessary.

Part B - Benefits to firms from training operative level workers

As well as having significant benefits for the workers concerned, improving the skills of operative level workers can provide major benefits to employers. While workforce

training is only one of the factors that influence firm's productivity and ultimately profitability, studies from Australia and overseas have highlighted the contribution of improved workforce skills to firms' performance.

Recent Australian research includes

- a Queensland Training Officers' Society paper *Cost-Benefits of Training, A Queensland Study* found that the company benefits too, as a more highly skilled and flexible workforce increases the ability to enhance efficiency and productivity.

- Quiggin (1995) concluded that improvements in technology are widespread and that even comparatively unskilled jobs require a much higher level of education

- research on triggers to training has highlighted the need for improvements in language and literacy skills, as well as behavioural skills in developing a more flexible, responsive workforce[2].

Overseas research has also emphasised the benefits to firms from improving the skills of all employees

- a study of British and German kitchen manufacturers found that output per employee was 2.3 times higher in German plants, due to more extensive use of technologically advanced machines and broader workforce skills
- a study of outerwear producers (1989) found German workers were twice as productive in making more specialised batches in small quantities
- a comparative analysis of productivity in the German and British hotel industries indicated that German workers in this industry were much more productive than their British counterparts[3]
- a recent US study found that a 10 per cent increase in the average education of *all* workers within an establishment is associated with an 8.6 per cent increase in output for all industries, whereas a 10 per cent increase in the book value of capital stock is associated with a 3.4 per cent increase in output[4].

To conclude, while it is difficult to directly relate the impact of changes in skill levels to increases in workplace productivity, the evidence which is available suggests that increased skills for operative level workers can play an important role in improving firms' competitiveness. Research both in Australia and overseas emphasises the need for improved skills for lower level workers in working with more technologically advanced equipment. In addition, improving the skills of operative level workers provides a more flexible, responsive workforce, which is more capable of responding effectively to competitive opportunities.

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2 Smith A., Roberts P., and Noble C. (1995) *Industry Training: The Factors that Affect Demand*

3 These examples are drawn from Organisation for Economic Co-operation and Development, (1994), *The OECD Jobs Study, Part II Evidence and Explanations, the Adjustment Potential of the Labour Market*, at pages 125 and 126

4 National Center on the Educational Qualities of the Workforce (1995*) The Other Shoe: Education's Contribution to the Productivity of Establishments*, p2

Training for operative level workers

Overview

This paper discusses the training needs of operative level workers, from two perspectives

- the need to improve operative level workers participation in vocational education to improve these workers chances of maintaining their current employment or in terms of seeking alternative employment should the need arise, as operative workers tend to be the most economically vulnerable section of the national workforce. These issues are addressed in Part A below.

- the benefits to firms from improving the skills of operative level workers. As well as being important in equity terms, upskilling operative level workers also has the potential to provide significant benefit to firms. Our argument is, simply, that training for operative level workers is not a luxury, it is a necessity. In an economic environment where marginal changes in productivity can make the difference in the capture of market share and return on investments, firms must take advantage of every opportunity to improve internal performance. One of the key methods of improving productivity, and therefore profit, is the upskilling of workers at operator level. These issues are canvassed in more detail in Part B below.

Part A - Job opportunities and career development - operative level workers -

1. INTRODUCTION

"The lesson is clear. If you drop out of high school or have no more than a high school diploma, do not expect a good routine production job to be waiting for you". [5]

Clerks, salespersons, plant and machine operators and labourers and related workers, defined as operative workers, currently form more than half the workforce. They:

- have comparatively low earnings
- have limited qualifications
- have relatively high unemployment
- are employed in industries subject to economic restructuring and sensitive to economic cycles
- have higher rates of labour mobility than non operative employees, and
- receive less training, both through the publicly funded system and from their employers, than non-operative employees.

These workers are the most "at risk" in economic downturns and from technology changes. Today's low skilled workers are tomorrows unemployed.

There is a need to refocus the training debate to give greater priority to recognised training programs with an emphasis not only on providing training for school leavers but also for less skilled adult workers to enhance their employment prospects.

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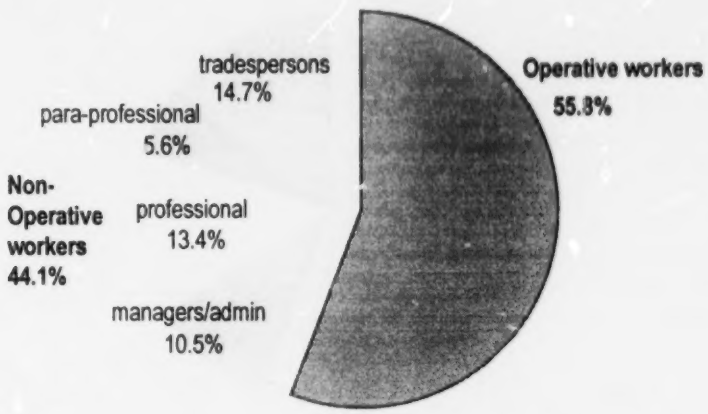
5 Robert Reich, *The Work of Nations*. p.213

2. CHARACTERISTICS OF OPERATIVE LEVEL WORKERS

2.1 Who are Operative Workers?

In February 1995, 4,513,900 persons or 55.8 per cent of the workforce were working in operative occupations (clerks, salespersons, plant and machine operators and labourers and related workers), compared with 3,576,400 or 44.2 per cent of the workforce employed in non-operative occupations (849,600, or 10.5 per cent as managers and administrators, 1,082,000, or 13.4 per cent as professionals, 455,600 or 5.6 per cent as para-professionals and 1,189,200 or 14.7 per cent as tradespersons).

Figure 1: Workforce



Source: Labour Force Australia (ABS Cat. No. 6203.0).

2.2 How much do they earn?

In 1993, earnings for full-time non-operative employees were 35.9 per cent higher than for operative employees ($740.10 compared with $544.50 per week), and for part-time non-operative employees, 46.3 per cent more than part-time operative workers ($299.80 compared with $204.90 per week)[6]. Within the non-operative occupations, full time managers and administrators earned 42 per cent above the national average, professionals 27.6 per cent and para-professionals 13.6 per cent while operative occupations such as clerks, sales persons and labourers and related workers earned well below the average national full time income.

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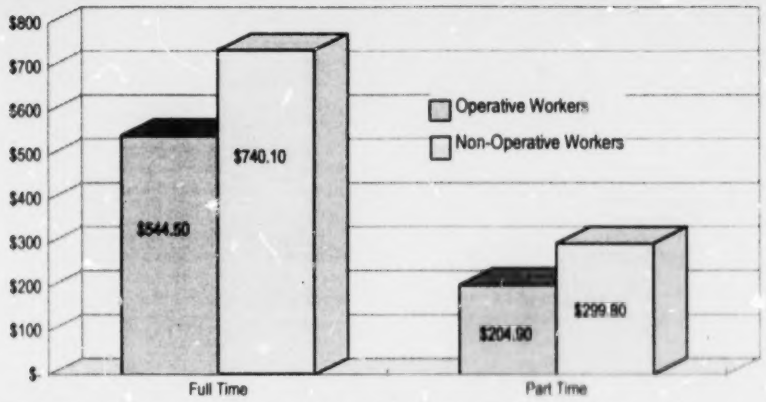
6 ABS, *Distribution of Employee Earnings and Hours, Australia* (ABS Cat. No. 6306.0)

Figure 2: Earnings



Source: ABS Distribution of Employee Earnings and Hours, Australia. (Cat. No. 6306.0)

2.3 Where is the growth in employment?

From May 1986 to February 1995, employment increased by 15.9 per cent. However, employment growth was concentrated in high paying and low paying jobs:

- employment for managers, administrators, professionals and para-professionals (high paid jobs) rose by 14.6 per cent

- employment for tradespersons (middle paid jobs) rose by 4.0 per cent; and

- employment of operative workers (low paid jobs) rose by 17.0 per cent.[7]

Projections to 2001 suggest below average growth in employment of plant operators, labourers and tradespersons and above average growth in employment of salespersons, all professionals and clerks.

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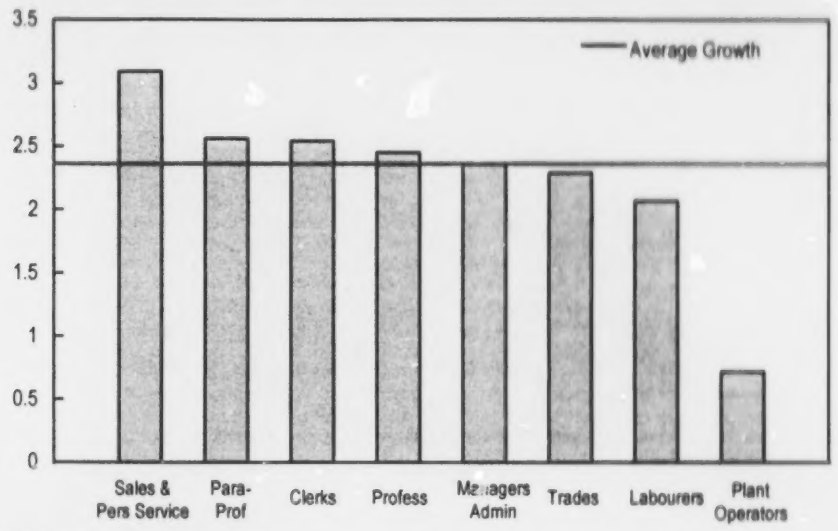
7 ABS, *The Labour Force, Australia* (ABS Cat. No. 6203.0).

Figure 3: Employment Growth Rates 1993-94 to 2001-02 (per cent)



Source: CoPS/SYNTEC, December 1994.

Rapid growth in low income jobs follows the large growth in part time employment in the last decade; part time employment grew by 52 per cent, while full time employment rose by 8.3 per cent. Of operative level positions in this period, more than two thirds were in part time positions and almost half of the total in part time female positions.

The rise in part time jobs reflects strong growth in employment in industries where part time employment represents a significant proportion of total employment and are characterised by a high proportion of operative workers. These include: retail trade, health and community services, finance, property and business services, culture and recreation, accommodation, cafes and restaurants and personal and other services.

3. ISSUES

3.1 Operative workers are more likely to be found in jobs and industries that are more economically vulnerable.

Operative level workers are more often found in industries that are prone to economic downturns and as a consequence are less securely employed than other groups. Some operative level workers, especially plant and machine operators and labourers, have been particularly affected by structural economic change in the last decade. Over this time, manufacturing job opportunities for these occupations declined by 1.9 per cent compared with an overall job growth of 15.9 per cent[8]. Continued scheduled tariff reductions and associated competitive pressures suggest this trend may continue.

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8 ABS, *The Labour Force, Australia* (ABS Cat. No. 6203.0).

3.2 Labour mobility is high amongst persons in lower level occupations

Many employers adopt 'last in, first out' employment policies and are likely to hoard more high-skilled, difficult to replace labour than low skilled labour, which is easier to replace. This is one factor which contributes to the high labour mobility of operative workers. 14.2 per cent of employed persons changed their job in the year ending February 1994. However, 15.5 per cent of operative level workers had been in their current jobs for less than one year compared to 12.6 per cent of non-operative workers.

Figure 4: Labour mobility

Source: Labour Mobility Australia (year ending Feb. 1994, ABS Cat. No. 6209.0).

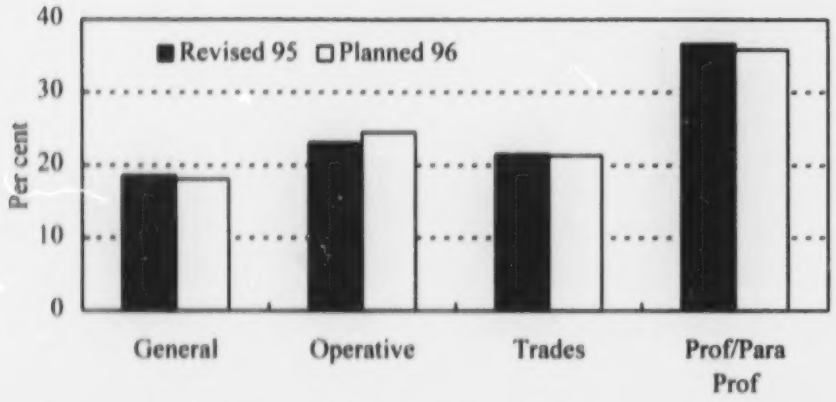
3.3 Operative workers receive less training than other workers both from publicly funded VET and from employers.

There appears to be a strong relationship between income levels and participation in training, including in house, employer-supported off the job and on the job training, indicating a strong link between occupational status and training opportunities.

The balance of training provision between occupational levels shows that operative workers are missing out. The proportion of VET activity directed towards training for each of the levels of occupations of operatives, tradespersons, professionals, paraprofessionals as well as general education and training is outlined below.

VET activity is relatively evenly distributed between general education, training for operative workers, tradespersons and professionals/para-professionals. The proportion of training, in terms of annual hours (curriculum), directed towards tradespersons is about 21 per cent whilst training directed towards operative workers is 24 per cent and that directed to professionals/para-professionals is about 36 per cent. The remaining 18 per cent of training is being directed towards general education and training. In comparison ot total persons employed in 1993-94, 14.7 per cent were in trades occupations, 55.8 per cent were operative level workers and 29.5 per cent were professionals or para-professionals.

Figure 5: Distribution of Activity by ASCO



Notes: The distribution of activity is across occupational levels which is different from that in *Directions and Resource Allocations for 1995* which was by stream.
Includes activity associated with Victoria's *Working Nation* targets.
Source: 1995 Training Profiles; 1996 Training Profiles

While little variation will occur in the distribution of training activity across occupational levels between 1995 and 1996, States/Territories have responded to the need identified in the *National Strategy* to direct more resources towards training for operative level workers. Some 56.4 per cent of growth activity for 1996 (in terms of annual hours curriculum) will be directed towards training for operative level workers and 67.7 per cent of growth in enrolments. The support for *Working Nation* targets is also reflected in this result. This activity provides for training programs ranging from short modules through to Associate Diplomas.

Operative workers are to receive the largest proportion of additional activity in 1996. Overall, training for operative level workers will increase by 5,658,000 hours, an increase of 10.2 per cent in 1996. Training for professional/para-professionals will increase by 1,621,000 AHC, an increase of 1.8 per cent and training for tradespersons will increase by 1,655,000 AHC, an increase of 3.7 per cent. Activity devoted to General Education and Training will increase slightly by 810,000 but it will still account for about 18 per cent of total government funded activity.

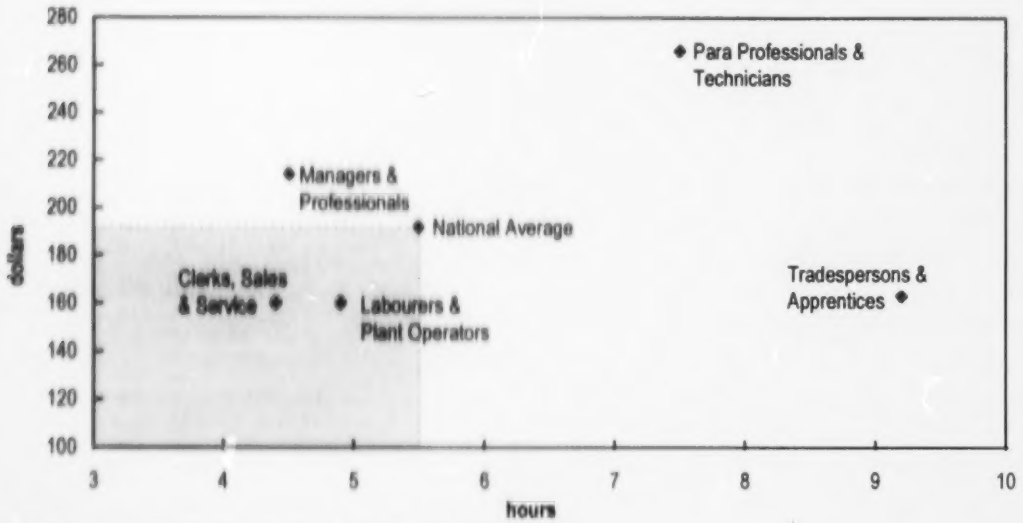
On average, operative workers also receive less intensive training than other workers. In 1993, 28 per cent of operative level training was in courses of less than 30 hours duration and 54 per cent was in courses of less than 90 hours.

Further, operative level workers also receive less training assistance from employers. Figure 5 illustrates that employers are investing below average dollars and time on training employees in the operative categories of Labourers and Plant Operators and Clerks, Sales and Service Workers. In 1993 employers spent on average $192 per

employee, for managers and professionals this was $214, for para-professionals and technicians $266, and for the operative categories only around $160.

Small establishments tend to provide less formal training than large ones and this trend is more pronounced for operative level workers. About 10 per cent of employers reported providing formal training for labourers and plant operators and 20 per cent of employers reported providing formal training for clerks, sales and service workers (for firms with less than 20 employees). In comparison, about 70 per cent of employers reported providing formal training for labourers and plant operators and 86.5 per cent reported providing formal training for clerks, sales and service workers (for firms with over 100 employees).

Figure 6: Training Hours and Dollars per Employee[9]



Source: Employer Training Practices 1994, (ABS Cat. No. 6356.0)

3.4 Link between qualifications and income[10]

There appears to be a strong link between educational attainment and income levels for most occupational categories. Professional and para-professional occupations have relatively high qualifications profiles with only 10.7 per cent of professionals and 24.9 per cent of para professionals lacking post school qualifications compared with a national average of 50.7 per cent. These occupations earn considerably above national average weekly earnings.

While the proportion of managers and administrators who lack post school qualifications is similar to the national average, many managers have high level skills but are uncredentialled.

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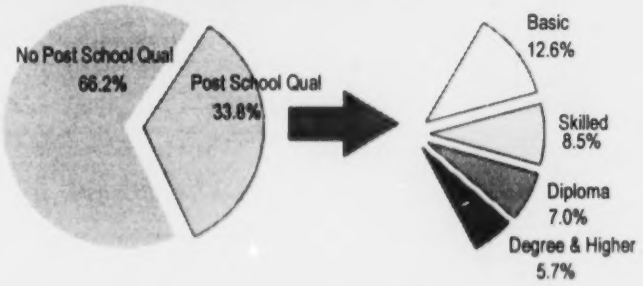
9 Data is for firms who reported that 50 per cent or more of their employees were in the Occupational Category.

10 No adjustment has been made for the professional transfer of teaching and nursing qualifications to the category degree and higher.

3.5 Link between qualifications and unemployment

50.7 per cent of all employees lack post school qualifications. However, 66.2 per cent of operative workers lack post school qualifications, and of those who do possess post school qualifications, 37.2 per cent have only basic post school qualifications.

Figure 7: Qualifications profile of Operative Workers



Source: Transition from Education to Work Australia, May 1994 (ABS Cat. No. 6227.0).

In comparison, only 10.7 per cent of professionals and 24.9 per cent of para-professionals lack post school qualifications. In relation to unemployed persons, 67.1 per cent lack post school qualifications, compared with 50.7 per cent of employed persons. A further 6.7 per cent had only basic vocational qualifications compared with 8.0 per cent of employed persons.

In terms of duration of unemployment, of those unemployed persons who were last employed as operative level workers, 18.0 per cent were unemployed for more than a year compared with 16.7 per cent of managers and administrators, 11.9 per cent of professionals, 16.1 per cent as para professionals, 15.5 per cent as trades persons. This suggests that operative level workers are more likely to be unemployed for longer periods of time.

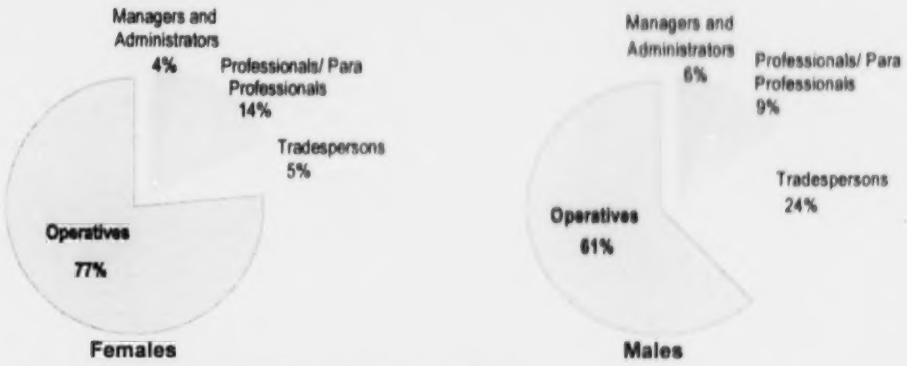
Therefore, in addition to being employed in industries and occupations that are experiencing low levels of full time employment growth, operative level workers may not have the skills that allow them to change jobs within industry or seek employment in different industries should the need arise.

3.6 Link between occupational status and unemployment

There also appears to be a strong link between occupational status and unemployment. Of unemployed persons who had a job within the last two years, 61 per cent of males and 77 per cent of females were last employed in operative level occupations although operative level employees comprised only 57.8 per cent of all employees (see following chart).

By comparison, only 30.4 per cent of the unemployed were last employed in non-operative occupations, although non-operative occupations represented 44.2 per cent of employment in February 1995.

Figure 8: Unemployed persons - last position held in previous two years



Source: The Labour Force, Australia (ABS Cat. No. 6203.0).

3.7 The decline in growth in middle paid jobs and full time work

Most job growth for operatives, both male and female, is occurring in part time work while more growth is occurring in full time work for non-operatives. While the rate of growth in part time male operative employment was more rapid than for females, the majority of the new part time operative workers were female.[11]

The problem for operative level workers is accentuated by the likelihood of limited employment growth in full time operative level work and in middle paid occupations generally. In the past decade growth in employment in operative level occupations has been similar to the national average. Projections suggest limited growth in employment in those occupations in the period to 2001 while growth in employment of tradespersons is also forecast to be below the national average[12].

As a result there are likely to be fewer full time job opportunities available for operative employees than has been the case in the past, either in alternative jobs at this level or at more advanced levels. The likely lack of job opportunities highlights the need to provide operative employees with greater skills to improve their employment prospects.

This is accentuated at the regional level where patterns of distribution of household income by suburb have been observed. One of the main causes appears to be the entry of females from higher socio-economic backgrounds into high paying jobs and the entry of

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11 ABS, *The Labour Force, Australia* (Aug 1986 to February 1995).

12 Department of Employment, Education and Training, *Australia's Workforce in the Year 2001*, and from projections by the Centre of Policy Studies, Monash University

females from lower socio-economic backgrounds into low paying jobs. This data confirms findings on increases in income disparity.

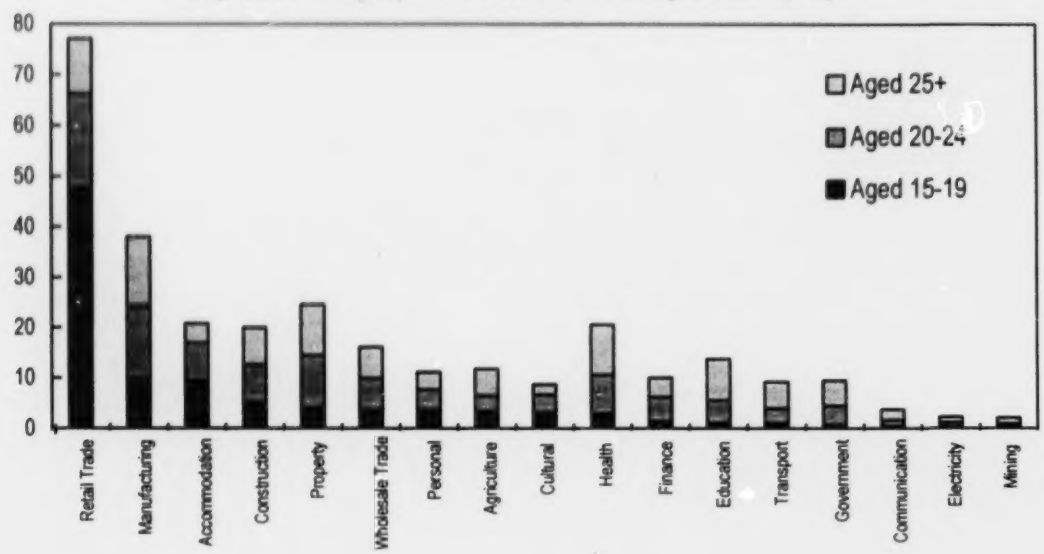
3.8 Older workers are concentrated in different industries than younger workers

In focusing on the needs of operative workers, it is important to recognise that the industries where older workers are concentrated (including operative workers) vary significantly from those where younger workers are mainly employed. Most younger workers, in the 15-19 age group tend to be employed in retail trade (nearly 50 per cent of employment in this age group) and manufacturing, with remaining employment spread widely between industries. For 20-24 year olds, again a significant proportion of employment arises from retail trade, manufacturing, but the share of employment in industries such as finance, health, construction and wholesale trade is more significant.

Employment of older workers aged 25+ is more diverse, with the main industries where employment is concentrated including manufacturing, retail trade, property and health industries. As a result, in directing training resources to meet the needs of operative workers, careful targeting is necessary to ensure that resources are directed towards those industries where employment in older age groups is more significant.

This information is represented graphically in the Chart below. The most striking figure to note is the extremely high concentration of young persons in the *Retail* sector. Over 47 per cent of persons aged 15 to 19 and almost 20 per cent of persons aged 20 to 24 are employed in this sector. Other key destinations for young persons are *Manufacturing, Accommodation, Construction and Property Services.*

Figure 9: Employment destinations of persons by age



Part B - Training for operative level workers where are the benefits for firms?

1. INTRODUCTION

The earlier part of this paper described the social and economic disadvantages which operative level workers face in the workforce. The closing remarks highlight the strategies which are suggested to improve the lot of base level employees and entrants. Clearly, increasing the training effort directed towards operative level workers will improve their earning potential, employment status and skill levels.

But what incentives are there for firms to undertake these initiatives? It is only in demonstrating the benefits to business of making changes that widespread reform of training priorities can be made, and this is the subject of this section of the paper.

As well as being important in equity terms, upskilling operative level workers also has the potential to provide significant benefit to firms. Our argument is, simply, that training for operative level workers is not a luxury, it is a necessity. In an economic environment where marginal changes in productivity can make the difference in the capture of market share and return on investments, firms must make use of all potential ways to improve internal performance.

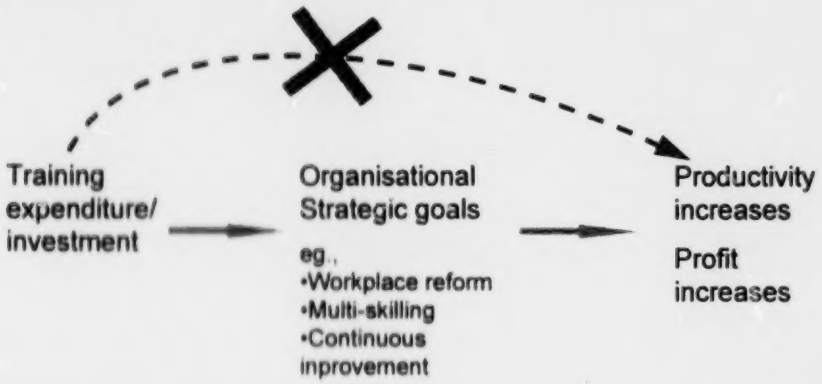
One of the key methods of improving productivity, and therefore profit, is the upskilling of workers at operator level. Research demonstrates that there are links between training and productivity. Certainly, there are links between productivity and profit. So improving operative level workers' skills provides benefits both to workers and the firms and industries which employ them and others. This is highlighted by recent Australian and overseas studies.

2. AUSTRALIAN EVIDENCE

Profit and productivity alone are not the goals sought by enterprises to justify their training expenditure is the findings of a recent study based on industry case studies by the Queensland Training Officers' Society paper titled *Cost-Benefits of Training, A Queensland Study*. The study aimed to assess how enterprises determine the benefit of training investment and what productivity conclusions may be drawn.

Organisations tended to look at the training investment in terms of achieving varied organisational and strategic goals as a *means* to improving profit and productivity, rather than in a direct relationship. This is illustrated in Figure 10.

Figure 10:



Training, whilst undertaken frequently, appears to be *planned* on an ad hoc basis and detailed cost/benefit analyses are undertaken sparingly. Detailed outcome prediction or analysis was avoided by enterprises, probably because of the difficulties in attributing cause to result as described above.

Much of the findings of the report stem from commonsense observations by workers at the case study sites. The study utilises numerous quotes from workers such as *"If you are trained correctly on the machines you know what you are doing and the job gets done much faster"*, or *"[training] reduces production costs; profits increase, this makes the company more stable and more competitive."*

The study found that it was easier to attribute causal links between training and specific work based improvements, than to draw a line between training and profit or productivity. It was found by all enterprises that specialist training led to decreased time spent on repairs, more efficient maintenance, better teamwork and multi skilling, for example.

The problem of attributing actual productivity increases to training employees emerges from each of the case studies. A typical finding is as follows:

> *Training can ... help improve working within groups and between groups, time management skills, and overall task efficiency and effectiveness. Positive outcomes are possible, in terms of morale, and the company benefits too, as* ***a more highly skilled and flexible workforce increases the ability to enhance efficiency and productivity****."* [emphasis added]

The conclusion to be drawn is that while it may be difficult to isolate the contribution of organisation wide skill enhancement through training, in concert with other initiatives training can make a marked contribution to improvements in firm's productivity.

Technology is another key influence in determining the need for training. Quiggin (1995) notes that "*improvements in technology typically act to reduce the demand for less skilled labour and to increase the demand for more skilled labour. Steam engines and later*

electric motors have wiped out most jobs based on the direct application of human and muscle power, but have created jobs for engineers and technicians. ***Even comparatively unskilled jobs like those of plant operators require a much higher basic level of education"*** [emphasis added][13].

Economic theory suggests firms will tend to reward their workers by paying wages and salaries which reflect workers marginal physical productivity, ie workers who exhibit higher productivity receive higher wages and salaries than lower productivity workers. Firms can benefit in two ways - from the increased productivity, and from the incentive and morale benefits in the workforce...

Australian evidence suggests that workers at lower skill levels, ie. operative workers, tend to be at lower pay levels than workers with higher level skills, (as discussed earlier in this paper) the conclusion to be drawn is that more skilled workers higher earnings are commensurate with the increases in productivity arising from their higher skill level. That is, firms stand to benefit from increased productivity should they invest in their operative level workers.

This appears consistent with international experience. Data concerning wage premia and training incidence by industry for the United States suggests that in those industries where training incidence is higher, wage premia are higher[14]...

A consortium from Charles Sturt University, the University of Technology Sydney and Australian Workplace Strategies, as part of a ANTA National Project managed by the Victorian Office of Technical and Further Education, recently conducted a series of intensive case studies on factors acting as triggers to training in firms, in respect of thirty firms in the processed food, electronic manufacturing, and construction industries. Findings suggested that respondent firms were generally satisfied with training in specific occupational skills through TAFE.

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13 Quiggin J, (1995) 'Should we be investing more in education?' paper for Conference on Efficiency and Equity in Education Policy, September 1995 p.11

14 Kruger A.B.and Summers L.H., 'Efficiency wages and the inter-industry wage structure', *Econometrica*, 56, 1988, p 259-293.

- However, while respondents generally expressed satisfaction with technical skills training available through TAFE, respondents commonly expressed interest in training in behavioural skills for all their workforces. At a *global* level the research indicated that the main factors leading firms to invest in training were:
- competitive pressures
- importance of quality assurance
- introduction of new technology
- workplace reorganisation, and
- award restructuring.

A key finding... "*was the generic nature of much of the training that enterprises were demanding. Usually this related to improvement of behavioural skills in the workforce rather than strict technical skills... such as communication skills, problem solving, the ability to work in teams*".

These triggers to training were seen as important by firms in developing a more responsive, flexible workforce.

A common thread in industry studies is the need for firms to concentrate on training for existing, and particularly operative level, workers. This also emerged from a project involving analysis of qualification profiles in Australian industry.

In *Agriculture forestry and fishing*, with employment not expected to rise, less emphasis is needed on entry level training. The ageing industry employment profile raises some issues for industry planning, including flexible delivery options using technology, recognition of prior learning, competency standards and management training.

For *Manufacturing (food beverages and tobacco)*, the report concluded that operator training must address language and numeracy problems.

The *Finance property and business services* sector places emphasis on front end training for permanent staff. However, the industry has a significant part time workforce in customer service areas. The industry must move to broaden the skill base of this part time workforce.

Richard Curtain's recent work Skill Formation in Small to Medium Enterprises while largely focusing on the importance of technical skills, also emphasised the importance of workforce flexibility. In this context, it is noteworthy that in most firms operative workers form the majority of the workforce...

3. OVERSEAS EVIDENCE

A number of recent overseas studies highlight the importance of the contribution of improved worker skills to economic performance and productivity at national and firm level.

> The OECD, in its recently published *Job Study*[15] concluded that: *There is considerable evidence for both OECD and non-OECD countries showing a strong overall association between skills and competencies of workers and the performance of national economies*[16].

The OECD also cited a number of studies undertaken by the National Institute of Economic and Social Research (NIESR). This exercise matched firms in different countries by specific product and scale of operation and discussed productivity improvements for firms arising from enhancing workforce skills. In particular, the OECD referred to three studies of productivity in British and German firms...

- a 1987 study of British and German kitchen furniture manufacturers found that output per employee was 2.3 times higher in German plants, due to more extensive use of computer numerically controlled (CNC) machines in Germany. The authors noted *"German workers were not only more likely to possess formal qualifications for their jobs, but were provided with more training by their employers in order to operate their machines without errors and at full speed in producing more specially ordered, high quality cabinets on a just in time basis"*[17]

- a study of outerwear producers (1989) found German workers were twice as productive in making more specialised batches in small quantities[18]

- a comparative analysis of productivity in the German and British hotel industries indicated that German workers in this industry were much more productive than their British counterparts[19].

While these differences in productivity could be explained to some degree by more intensive skill formation in respect of occupationally specific skills in respect to German workers, it also seems likely to be related to the flexibility of German workers through the acquisition of generic skills.

In addition, a recent study of one industry in four European countries showed out that the

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15 Organisation for Economic Co-operation and Development, (1994) *The OECD Jobs Study, Evidence and Explanations, Part II - The Adjustment Potential of the Labour Market*, p.34

16 Organisation for Economic Co-operation and Development (1994) *The OECD Jobs Study, Evidence and Explanations Part II - The Adjustment Potential of the Labour Market, p126.*

17 Ibid p.125

18 Ibid

19 Ibid

level and breadth of skills available to an enterprise through national VET arrangements can influence both the level of technology able to be used in production and the type of production processes to which technology can be applied. It affects the quality of products and the capacity of firms to operate in markets demanding highly customised products as opposed to simple high volume products.[20]

A recent United States study also highlights the importance of providing training for all members of the workforce. The study was based on a survey of approximately 3,000 US establishments employing 20 or more workers by the National Center on the Educational Quality of the Workforce.

The study found that the "boost to productivity associated with increased years of schooling is both more dramatic and more likely to vary by industry" than increases in capital stock...

- a 10 per cent increase in the book value of capital stock is associated with a 3.4 per cent increase in output, controlling for materials used, employee hours, age of equipment, industry size, employee turnover and the key indicators of human capital.

- a 10 per cent increase in the average education of *all* workers within an establishment (equivalent to slightly more than additional year of schooling) is associated with an 8.6 per cent increase in output for all industries, other things equal, rising to 11 per cent for the non-manufacturing sector.

The National Center emphasised that this represents a *double payoff* for a nation investing in education, given that increases in income for individuals from additional education are well documented.

4. SOME CONCLUSIONS

While it is difficult to directly relate the impact of changes in skill levels to increases in workplace productivity, available evidence suggests that increased skills for operative level workers can play an important role in improving firms' competitiveness. Research both in Australia and overseas emphasises the need for improved skills for lower level workers in working with more technologically advanced equipment. In addition, improving the skills of operative level workers provides a more flexible, responsive workforce, which is more capable of responding effectively to competitive opportunities.

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20 Manger, van Ark and Wagner, from Sweet .R., Dusseldorp Skills Forum, (1995) 'The Naked Emperor: Training Reform, Initial Vocational Preparation and Youth Wages', in *Policy Forum*, p 101

POLICY IMPLICATIONS AND ACTIONS

The preceding sections of this paper have discussed the problems faced by operative workers, and reviewed the benefits to firms from improving access to training for this part of the workforce.

As outlined in detail in Part A of this paper, operative level workers are economically at risk, in relation to their income levels and job security. This is emphasised by the high proportion of the unemployed whose last employment was in operative level occupations, and operative level workers having limited qualifications and receiving limited training both from public provision and employer training. Although most operative level positions generally do not require a large amount of training, technological change and economic restructuring highlight the need to provide these workers with skills to continue to effectively undertake their present job or find another job in the same industry or a different industry should the need arise.

At the same time, the lack of appropriate training for operative level workers appears likely to be impacting adversely on firms' productivity performance. As noted above there are difficulties in relating the impact of changes in skill levels to increases in workplace productivity. However, available evidence suggests that increased skills for operative level workers can play an important role in improving firms' competitiveness. Research both in Australia and overseas emphasises the need for improved skills for lower level workers in working with more technologically advanced equipment. In addition, improving the skills of operative level workers provides a more flexible, responsive workforce, which is more capable of responding effectively to competitive opportunities.

Hence there are two broad arguments in favour of increasing training opportunities for operative level workers. The first argument is an equity argument, related to the need to reduce the economic vulnerability of operative workers and enhance their chances of attaining and retaining jobs. The second argument relates to the efficiency benefits to employers that can arise from having a better trained workforce. In an increasingly competitive international economic environment, it is imperative that firms take every opportunity to improve their productivity.

The combination of these arguments suggests there is an urgent need for Australia to develop a training strategy which is integrated into the existing delivery of vocational education and training to meet the needs of the operative level workforce and their employers. The first steps in the development of a strategy are:

- identifying the type and level of training operative workers may require (eg language, literacy and numeracy skills or more specific vocational skills)

- emphasising the needs of operative workers during the profile process[21] so that maximum opportunities can be provided through the public VET system for the training of operative level workers, and
- encouraging public providers to provide more training opportunities for operative level workers and employers to increase their own training efforts for operative level employees.
- flexible delivery, including delivery in the workplace and partnerships between firms and providers

The above suggestions will enhance these workers' capacity to progress their careers with their existing employers or seek alternative employment when necessary. In addition enhancing operative workers skills has the potential to improve these workers productivity, and in turn their employers productivity to better meet competitive pressures.

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[21] For a discussion of the profile process, see Attachment A

STATE TRAINING PROFILES

Background
Together with the National Strategy, State Training Profiles are the key planning instruments of the National Vocational Education and Training System (NVETS) and their preparation is a requirement of the *Australian National Training Authority Act 1992*.

A Training Profile is intended to be a single and comprehensive plan for the provision and support for vocational education and training for the immediate year ahead, as well as providing indicative estimates for the following two years. The Profiles are viewed by ANTA and the States and Territories as both planning and resource documents.

As planning documents, States and Territories are required:

- within the agreed framework of the National Strategy, to outline initiatives with which they intend to progress the various elements of the Strategy;
- to show how they intend to allocate funds for vocational education and training, specifically drawing the link between the priorities of industry, other key stakeholders and shifts in training activity; and
- to outline how they intend to comply with other aspects of the NVETS Agreement, in particular maintenance of effort.

As resource documents, the Profiles are intended to provide an outline of training activity to which Commonwealth and State/Territory funds will be applied, and they are the basis for the allocation of Commonwealth funding under the NVETS Agreement.

Some of the key achievements resulting from the introduction of Training Profiles are:

- enhanced planning processes, in particular the increased involvement of industry and other key stakeholders in State/Territory planning processes;
- the provision of training delivery which is more attuned to the demands and requirements of industry
- the development of State/Territory policies and strategies which promote the concept of a competitive training market, eg. tendering and the formation of strategic alliances;
- planning within an agreed framework of national priorities, while ensuring diversity and choice at the State/Territory level; and
- enhanced flexibility in the allocation of resources for capital works, including the allocation of funds to non-TAFE training providers.

Key Indicators
Minsters have endorsed a number of key indicators or priorities, drawn from the National Strategy as a guide to the development of the Training Profiles. In the Profile documents, States and Territories outline the initiatives they have planned or undertaken to achieve these priorities, together with expected outcomes.

The priorities covered by the Profiles include: best practice and quality improvement; the distribution of resources within and between industry sectors; the implementation of the AVTS; how the training needs of

under-represented groups are to be met; the allocation of resources through competitive processes or development of the open training market; and accreditation assessment and the recognition of training.

In addition to monitoring State responses to the National Strategy, ANTA examines the Profiles to determine whether States have met a number of other responsibilities. This includes:

- maintaining their effort in the VET sector, both in terms of activity and expenditure;
- demonstrating a clear link between industry needs and priorities and planned outcomes;
- increased activity as a result of growth funds expenditure;
- a capital development plan which shows expenditure supporting State and national VET priorities; and
- a commitment to participation in national initiatives and programs.

Activity Tables

The 1996 Profiles marked the introduction of a new format for the presentation of planned activity. Developed in consultation with State and Territory Training Agencies, it is a significant improvement on previous approaches and describes the provision of VET activity in a way which is more relevant to industry.

In the new format, training provision is linked to outcomes by coding courses to the main occupation or skill area for which they prepare students. The format also recognises that some States and Territories provide training on a modular basis. Modules are coded by Discipline Group, a description of the principal area of skill or knowledge taught in that module.

Both the classification of courses by the Australian Standard Classification of Occupations (ASCO) and of modules by Discipline Group, are classification systems introduced under the Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS). The format aggregates the occupation ASCO codes (to which courses are linked) and the Discipline Group (to which modules are linked) into 19 Training Areas. The 19 areas fall into 3 categories:

Category A - occupational training which is industry specific (15 of the areas fall into this category)

Category B - occupational training which is non-industry specific (3 of the areas are in this category); and

Category C - general education and training, including activity with no specific occupational content but equipping students with general workforce skills such as literacy, numeracy and social skills.

Timelines

ANTA has arranged the timing of the Profile Guidelines with the prime objective of giving States and Territories the maximum time in which to plan and develop their Training Profiles. For example, the planning and consultation process on the following year's Profiles generally commences in October/November, followed by the distribution of draft Guidelines to States in December.

States have until about the end of June to submit draft Profiles to ANTA for assessment and any issues needing clarification are negotiated between ANTA and the States during early July. Final Training Profiles and associated resource allocations, are approved by Ministers in November each year.

However, State planning processes are largely independent of the guideline consultations and reporting requirements with ANTA. All States and Territories are able to commence their own consultations with

industry, training providers and key stakeholders in the system, well in advance of the date required for the submission of the Profile to ANTA.

Following the approval of the Profiles by the ANTA Ministerial Council, State/Territory implementation is monitored throughout the year and States and Territories are required to report achievements and variances in the Annual National Report compiled by the Authority each calendar year.

Consultation and Industry Advice on the Profiles

The Training Profiles provide information on the planning mechanisms and processes which underpin a State's development of a Profile. Profile documents report a significant level of consultations between the State Training Agency and State ITABs as the primary source of advice on the VET priorities of industry in that State.

State Training Agencies also undertake consultations with community groups, public training providers and colleges, private and community based providers, regional business groups and development organisations, local education and training organisations, group training companies and target groups.

National ITABs provide advice on national training priorities to ANTA through the provision of National VET Plans and these are consolidated into a national Guide which is referred to by ANTA during its analysis of State Training Profiles. The Training Profiles are therefore,
the point at which advice to States and Territory Training Agencies from State ITABs, and from National ITABs to ANTA, comes together.

Legislative Responsibility
State Training Agencies are recognised under State legislation, as well as the ANTA Act, as the bodies with overall responsibility for the VET system within their own borders. They are accountable to State Ministers and Parliaments for their operational responsibilities and to the Ministerial Council on matters of national VET policy.

Response of ANTA
Under the ANTA Act, it is the relevant State Training Agency to which ANTA responds, in regard to the Training Profiles and all other matters concerning VET activity within a particular State.

The Role of State Training Agencies
Under the ANTA Act, the role of State Training Agencies is spelt out in four areas:

- to provide to ANTA policy advice and information on training needs and the funding implications of those training needs, developed in consultation with all interested stakeholders, including State government and industry;

- to develop, in conjunction with ANTA, detailed Training Profiles, based on the National Strategy and in accordance with agreed planning parameters;

- to ensure that the management of the State training system, including the planning, regulation and provision of both public and private training, is in accordance with the National Strategy and the State Training Profile; and

- to provide an annual report to ANTA on performance, which will enable the compilation of an integrated report for approval by the Ministerial Council (the Annual National Report).

Management of the State VET System
In regard to the management of the VET system, it is particularly important to note that State Training Agencies have responsibility for the management and monitoring of all VET training in the State, wherever it may occur.

This includes training in the public system (such as TAFE Colleges and Institutes); with private and community based providers; within industry and enterprises (either on the job or externally such as in skill centres); and increasingly through partnerships and strategic alliances between government, industry and providers.